Digital Front End Crate Controller

Printed Circuit Board Fabrication

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General Information

board revision:	**A**
board size:	233.25mm x 320mm
board thickness:	**0.093" +/- 10%**
board material:	FR4
layers:	6
controlled impedance:	No
copper:	**½ oz TOP and BOTTOM, 1oz all other layers**
solder mask:	BOTH sides, LPI, Black
silk screen:	BOTH sides, White
traces:	7 mil line / 7 mil space
finish:	"White Tin" plating

Filenames

All gerbers are POSITIVE IMAGE. Gerber files are in RS254-X format.

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TOP routing layer             dfec_top.gbr
GROUND plane                  dfec_gnd.gbr
TOP INNER routing layer       dfec_inr.gbr
3V power plane                dfec_v3 .gbr
5V power plane                dfec_v5 .gbr
BOTTOM routing layer          dfec_bot.gbr

soldermask top                dfec_smt.gbr
soldermask bottom             dfec_smb.gbr
silkscreen top                dfec_sst.gbr
silkscreen bottom             dfec_ssb.gbr

drill tape #1                 thruhole.tap
drill tape #2                 2_7.tap

fabrication drawing           dfec_drd.gbr

assembly drawing top          dfec_ast.gbr
assembly drawing bottom       dfec_asb.gbr
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Layer Stackup

This board does not require controlled impediances. Note: total board thickness should be 0.093" +/- 10%. Follow the layer order shown below.

1. TOP ROUTING LAYER ("COMPONENT" SIDE)

CORE

2. PLANE LAYER

PRE-PREG

3. INNER ROUTING LAYER

CORE

4. VCC3 POWER PLANE

PRE-PREG

5. VCC5 POWER PLANE

CORE

6. BOTTOM ROUTING LAYER ("SOLDER" SIDE)

Colors

- soldermask: LPI BLACK
- silkscreen: WHITE

Thruholes

- **10** different hole sizes, some of which are NON-PLATED.
- **813** holes total
- 0.381mm hole is smallest
- 3.000mm hole is largest
- no blind or buried vias
- refer to dfec_drd.gbr for fabrication data and hole legend

Contact Prints

The fabricator shall generate photoplots and sent them to Fermilab for approval prior to fabrication.

Board Testing

Bare boards must be tested with either a flying head probe or a bed of nails fixture. Each tested good board must be clearly stamped or marked with paint.

Mechanical Considerations

The overall board dimensions are 233.25mm x 320mm. The TOP and BOTTOM edges of the board must be beveled or milled as specified in the dfec_ast.gbr drawing.

Contact Information

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